



# ***STIC Search Report***

***EIC 1700***

**STIC Database Tracking Number: 169399**

**TO: Michael Bernshteyn**

**Location:**

**Art Unit : 1713**

**October 25, 2005**

**Case Serial Number: 10/523611**

**From: Kathleen Fuller**

**Location: EIC 1700**

**REMSEN 4B28**

**Phone: 571/272-2505**

**Kathleen.Fuller@uspto.gov**

## **Search Notes**



# STIC Search Results Feedback Form

## EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

## SEARCH REQUEST FORM

## Scientific and Technical Information Center

Requester's Full Name: MICHAEL S. KASHERA Examiner #: 81515 Date: 10/24/05  
 Art Unit: 1713 Phone Number 30 2-2411 Serial Number: 10/5234611  
 Mail Box and Bldg/Room Location: \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: 08/08/2002

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please find formulas (1) and (2)

Thank you

## STAFF USE ONLY

Searcher: R. Fuller

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: 10/25/05

Searcher Prep & Review Time: 40

Clerical Prep Time: \_\_\_\_\_

Online Time: 44

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) 3

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN ✓

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr.Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

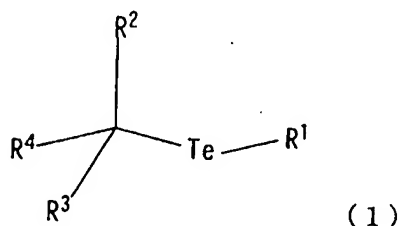
WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

10/523611  
08/08/2002 Japan

## CLAIMS:

1. A process for producing a living radical polymer characterized in that a vinyl monomer is polymerized with use  
5 of a living radical polymerization initiator represented by the formula (1) and a compound represented by the formula (2)



wherein  $R^1$  is  $C_1$ - $C_8$  alkyl, aryl, substituted aryl or an aromatic heterocyclic group,  $R^2$  and  $R^3$  are each a hydrogen  
10 atom or  $C_1$ - $C_8$  alkyl, and  $R^4$  is aryl, substituted aryl, an aromatic heterocyclic group, acyl, oxycarbonyl or cyano



wherein  $R^1$  is the same as above.

2. A process according to claim 1 wherein  $R^1$  in the  
15 living radical polymerization initiator represented by the formula (1) is  $C_1$ - $C_4$  alkyl, phenyl, naphthyl, pyridyl, furyl or thienyl,  $R^2$  and  $R^3$  are each a hydrogen atom or  $C_1$ - $C_8$  alkyl, and  $R^4$  is phenyl, naphthyl, pyridyl, furyl, thienyl, methoxycarbonyl, ethoxycarbonyl or cyano.

- 20 3. A process according to claim 1 wherein  $R^1$  in the living radical polymerization initiator represented by the

=> FILE REG

FILE 'REGISTRY' ENTERED AT 10:31:25 ON 25 OCT 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 24 OCT 2005 HIGHEST RN 865981-77-7

DICTIONARY FILE UPDATES: 24 OCT 2005 HIGHEST RN 865981-77-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

\*\*\*\*\*  
\*  
\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*  
\*  
\*\*\*\*\*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> FILE HCAPLU

FILE 'HCAPLUS' ENTERED AT 10:31:30 ON 25 OCT 2005

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FILE COVERS 1907 - 25 Oct 2005 VOL 143 ISS 18

FILE LAST UPDATED: 24 Oct 2005 (20051024/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L51

L4 31 SEA FILE=REGISTRY ABB=ON (106911-77-7/BI OR 109-72-8/BI OR  
131589-87-2/BI OR 137317-43-2/BI OR 14804-61-6/BI OR 160376-84-  
1/BI OR 20334-43-4/BI OR 24991-47-7/BI OR 25034-86-0/BI OR  
25038-87-3/BI OR 25067-61-2/BI OR 25249-16-5/BI OR 28554-25-8/B  
I OR 32294-60-3/BI OR 415679-75-3/BI OR 474094-06-9/BI OR  
55214-85-2/BI OR 585-71-7/BI OR 600-00-0/BI OR 652-28-8/BI OR  
658058-30-1/BI OR 658058-31-2/BI OR 658058-32-3/BI OR 658058-33  
-4/BI OR 658058-34-5/BI OR 658058-35-6/BI OR 68120-42-3/BI OR  
77129-69-2/BI OR 9003-42-3/BI OR 9003-53-6/BI OR 9011-14-7/BI)  
L5 STR

Te^G2 G3~^C~Te^G1  
@5 6 1 2 3 4

*4,234 structures*

Cy @7

VAR G1=5/AK/7  
VAR G2=AK/7  
VAR G3=AK/7/CN  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
GGCAT IS UNS AT 7  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE  
L7 4234 SEA FILE=REGISTRY SSS FUL L5  
L19 STR

Ak @6 G1^Te^Te^G1  
1 2 3 4

*353 structures from the query*

Cy @5

VAR G1=5/6  
NODE ATTRIBUTES:  
CONNECT IS E2 RC AT 2  
CONNECT IS E2 RC AT 3  
CONNECT IS E1 RC AT 6  
DEFAULT MLEVEL IS ATOM  
GGCAT IS UNS AT 5  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L21 353 SEA FILE=REGISTRY SSS FUL L19  
L22 3 SEA FILE=REGISTRY ABB=ON L4 AND L21  
L23 4233 SEA FILE=REGISTRY ABB=ON L7 NOT L22  
L25 1832 SEA FILE=HCAPLUS ABB=ON L23  
L26 924 SEA FILE=HCAPLUS ABB=ON L25(L) PREP/RL  
L29 22 SEA FILE=HCAPLUS ABB=ON L26(L) CAT/RL  
L35 7 SEA FILE=HCAPLUS ABB=ON L26(L) INITIAT?  
L37 950 SEA FILE=HCAPLUS ABB=ON L21  
L38 314 SEA FILE=HCAPLUS ABB=ON L37 AND L26  
L39 8 SEA FILE=HCAPLUS ABB=ON L29 AND L38  
L40 397 SEA FILE=HCAPLUS ABB=ON L37 AND L25  
L41 42 SEA FILE=HCAPLUS ABB=ON L40 AND CAT/RL  
L42 3 SEA FILE=HCAPLUS ABB=ON L35 AND L37  
L43 42 SEA FILE=HCAPLUS ABB=ON L39 OR L41 OR L42  
L46 7 SEA FILE=HCAPLUS ABB=ON L43 AND (POLYMER? OR PLASTIC?)/SC,SX  
L47 40 SEA FILE=HCAPLUS ABB=ON L25(L) (CAT/RL OR INITIAT?)  
L48 10 SEA FILE=HCAPLUS ABB=ON L37 AND L47  
L49 10 SEA FILE=HCAPLUS ABB=ON L39 OR L46 OR L48  
L50 7 SEA FILE=HCAPLUS ABB=ON L41 AND POLYMER?  
L51 10 SEA FILE=HCAPLUS ABB=ON L49 OR L50

=&gt; D L51 1-10 BIB ABS IND HITSTR

L51 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2005:428591 HCAPLUS  
DN 142:454333  
TI Radiation-sensitive chemically amplified positive-working resists  
IN Nishimura, Isao; Kobayashi, Eiichi; Seyano, Akimasa; Wang, Yong  
PA JSR Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 44 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005128049	A2	20050519	JP 2003-360291	20031021
PRAI	JP 2003-360291		20031021		

OS MARPAT 142:454333

AB The resists comprise alkali-insol. **polymers** having acid-labile groups increasing solubility in alkaline solns. upon contact with acids, and radiation-sensitive acid generators, wherein the **polymers** are prepared by using RbC(Rc)(Rd)TeRa [Ra = C1-8 alkyl, (substituted) aryl, atom. heterocycle; Rb, Rc = H, C1-8 alkyl; Rd = (substituted) aryl, aromatic heterocycle, acyl, etc.], and optionally ditellurides (RaTe)<sub>2</sub> as radical living **polymerization** initiators. In the **polymerization**, radical **polymerization** initiators may also be employed. The **polymers** has narrow mol.-weight distribution peaks with small lot-to-lot fluctuation and resultant resists show high transparency and sensitivity for far UV, x rays, and electron rays, and high dry etching resistance, and provide fine patterns with good profile.

IC ICM G03F007-039

ICS C08F004-72; H01L021-027; C08F020-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

ST radiation sensitive chem amplified pos resist  
 IT Positive photoresists  
     (far UV; radiation-sensitive pos.-working resist containing **polymer**  
     prepared by using radical living **polymerization**)  
 IT **Polymerization** catalysts  
     (living, radical, tellanyl compound; radiation-sensitive pos.-working  
     resist containing **polymer** prepared by using radical living  
     **polymerization**)  
 IT **Polymerization**  
     (living, radical; radiation-sensitive pos.-working resist containing  
     **polymer** prepared by using radical living **polymerization**)  
 IT Electron beam resists  
     Resists  
     X-ray resists  
         (pos.-working; radiation-sensitive pos.-working resist containing  
         **polymer** prepared by using radical living **polymerization**)  
 IT 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate  
     RL: **CAT (Catalyst use)**; TEM (Technical or engineered material  
     use); **USES (Uses)**  
         (acid generator, resist component; radiation-sensitive pos.-working  
         resist containing **polymer** prepared by using radical living  
         **polymerization**)  
 IT 340964-38-7P  
     RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
     use); **PREP (Preparation)**; **USES (Uses)**  
         (alkali-insol., resist component; radiation-sensitive pos.-working  
         resist containing **polymer** prepared by using radical living  
         **polymerization**)  
 IT 109-72-8, n-Butyllithium, reactions 600-00-0, Ethyl 2-bromo-isobutyrate  
     917-54-4, Methyllithium  
     RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**  
         (in preparation of tellanyl radical living **polymerization** initiator;  
         radiation-sensitive pos.-working resist containing **polymer** prepared  
         by using radical living **polymerization**)  
 IT 20334-43-4P, Dimethyl ditelluride 77129-69-2P, Di(butyl)  
     ditelluride 474094-06-9P 658058-35-6P  
     RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); **PREP**  
     (**Preparation**); **USES (Uses)**  
         (radical living **polymerization** initiator, for preparing  
         **polymer**; radiation-sensitive pos.-working resist containing  
         **polymer** prepared by using radical living **polymerization**)  
 IT 78-67-1, AIBN 2589-57-3, MAIB  
     RL: **CAT (Catalyst use)**; **USES (Uses)**  
         (radical **polymerization** initiator, for preparing **polymer**;  
         radiation-sensitive pos.-working resist containing **polymer** prepared  
         by using radical living **polymerization**)  
 IT 20334-43-4P, Dimethyl ditelluride 77129-69-2P, Di(butyl)  
     ditelluride 474094-06-9P 658058-35-6P  
     RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); **PREP**  
     (**Preparation**); **USES (Uses)**  
         (radical living **polymerization** initiator, for preparing  
         **polymer**; radiation-sensitive pos.-working resist containing  
         **polymer** prepared by using radical living **polymerization**)  
 RN 20334-43-4 HCAPLUS  
 CN Ditelluride, dimethyl (9CI) (CA INDEX NAME)

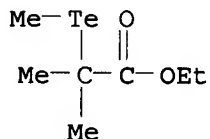
H<sub>3</sub>C-Te-Te-CH<sub>3</sub>



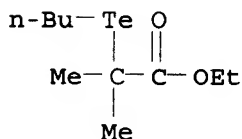
RN 77129-69-2 HCAPLUS  
 CN Ditelluride, dibutyl (9CI) (CA INDEX NAME)

n-Bu-Te-Te-Bu-n

RN 474094-06-9 HCAPLUS  
 CN Propanoic acid, 2-methyl-2-(methyltelluro)-, ethyl ester (9CI) (CA INDEX NAME)



RN 658058-35-6 HCAPLUS  
 CN Propanoic acid, 2-(butyltelluro)-2-methyl-, ethyl ester (9CI) (CA INDEX NAME)



L51 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:428239 HCAPLUS

DN 142:464450

TI Acid-dissociating group-containing acrylic **polymers** with narrow molecular weight distribution and their manufacture

IN Nishimura, Isao; Wang, Yong; Kameshima, Takashi

PA JSR Ltd., Japan; Otsuka Chemical Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 37 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005126459	A2	20050519	JP 2003-360290	20031021
PRAI	JP 2003-360290		20031021		

OS MARPAT 142:464450

AB The **polymers**, especially useful for lithog., are manufactured in the presence (1) R<sub>1</sub>TeCR<sub>2</sub>R<sub>3</sub>R<sub>4</sub> [I; R<sub>1</sub> = C1-8 alkyl, (un)substituted aryl, aromatic heterocyclic; R<sub>2,3</sub> = H, C1-8 alkyl; R<sub>4</sub> = (un)substituted aryl, aromatic heterocyclic, acyl, oxycarbonyl, cyano] or (2) mixts. of ≥1 compds. selected from I, radical **polymerization** initiators, and (R<sub>5</sub>Te)<sub>2</sub> (R<sub>5</sub> = same as R<sub>1</sub>). Thus, 3.5 mmol 2-methyl-2-propenoic acid hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, 1.5 mmol 2-methyl-2-propenoic acid 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, and 5 mmol 2-methyl-2-propenoic acid 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester were **polymerized** in the presence of Et 2-methyl-2-(butyltelluro)propanoate (0.2 mmol), dibutylditelluride (0.10 mmol), and

MAIB (0.10 mmol) to give a copolymer (yield 85%) showing Mw 10000, Mw/Mn 1.24, good solubility to propylene glycol monomethyl ether acetate, and decreased Mw fluctuation.

IC ICM C08F004-00  
ICS C08F020-10; G03F007-033; G03F007-039; C07C395-00

CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 74

ST acid dissocg group acrylic **polymer** manuf; dibutylditelluride  
**polymn** initiator adamantyl methacrylate **polymer**; narrow  
mol wt distribution **polymer**;  
methylbutyltelluropropanoate adamantyl methacrylate living **polymn**  
lithog

IT Lithography  
(acid-dissociating group-containing acrylic **polymers** with narrow mol.  
weight distribution)

IT **Polymerization** catalysts  
(living; acid-dissociating group-containing acrylic **polymers** with  
narrow mol. weight distribution)

IT 340964-38-7P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(acid-dissociating group-containing acrylic **polymers** with narrow mol.  
weight distribution)

IT 109-72-8, Butyl lithium, reactions 600-00-0, Ethyl 2-bromoisobutyrate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acid-dissociating group-containing acrylic **polymers** with narrow mol.  
weight distribution)

IT 20334-43-4P, Dimethylditelluride 77129-69-2P,  
Dibutylditelluride 474094-06-9P 658058-35-6P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(living **polymerization** initiator; acid-dissociating  
group-containing acrylic **polymers** with narrow mol. weight  
distribution)

IT 78-67-1, AIBN 2589-57-3, MAIB  
RL: CAT (Catalyst use); USES (Uses)  
(radical **polymerization** initiator; acid-dissociating group-containing  
acrylic **polymers** with narrow mol. weight distribution)

IT 20334-43-4P, Dimethylditelluride 77129-69-2P,  
Dibutylditelluride 474094-06-9P 658058-35-6P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(living **polymerization** initiator; acid-dissociating  
group-containing acrylic **polymers** with narrow mol. weight  
distribution)

RN 20334-43-4 HCAPLUS  
CN Ditelluride, dimethyl (9CI) (CA INDEX NAME)

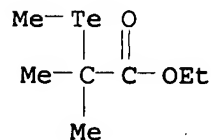
H<sub>3</sub>C-Te-Te-CH<sub>3</sub>

RN 77129-69-2 HCAPLUS  
CN Ditelluride, dibutyl (9CI) (CA INDEX NAME)

n-Bu-Te-Te-Bu-n

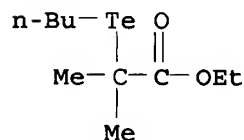
RN 474094-06-9 HCAPLUS  
CN Propanoic acid, 2-methyl-2-(methyltelluro)-, ethyl ester (9CI) (CA INDEX

(NAME)



RN 658058-35-6 HCAPLUS

CN Propanoic acid, 2-(butyltelluro)-2-methyl-, ethyl ester (9CI) (CA INDEX NAME)



L51 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:986149 HCAPLUS

DN 141:411404

TI Manufacture of organotellurium compounds as living radical polymerization initiators

IN Yamako, Shigeru; Yoshida, Junichi; Kameshima, Takashi

PA Otsuka Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004323437	A2	20041118	JP 2003-121825	20030425
PRAI	JP 2003-121825		20030425		

OS MARPAT 141:411404

AB The compds. are manufactured by treatment of azo polymerization initiators with R<sub>1</sub>TeTeR<sub>2</sub> (R<sub>1</sub>, R<sub>2</sub> = C1-8 alkyl, aryl, heterocyclic group). Thus, AIBN was treated with MeTeTeMe to 17% give 2-methyl-2-methyltellanylpropionitrile.

IC ICM C07C395-00

ICS C08F004-00

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 25

ST organotellurium living radical polymn initiator manuf; azo

polymn initiator ditelluride substitution; AIBN

dimethylditelluride substitution; methyl methyltellanyl propionitrile

polymn initiator manuf

IT Tellurides

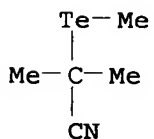
RL: RCT (Reactant); RACT (Reactant or reagent)

(ditellurides, dialkyl; manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymn . initiators with ditellurides)

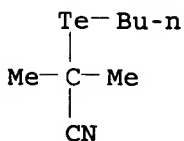
IT Polymerization catalysts

(living, radical; manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization

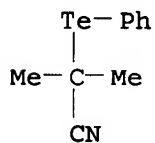
- initiators with ditellurides)
- IT 109-72-8, Butyllithium, reactions 591-51-5, Phenyllithium 917-54-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ditelluride manufactured from; manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymers . initiators with ditellurides)
- IT 582319-76-4P 791104-08-0P 791104-09-1P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization initiators with ditellurides)
- IT 20334-43-4P, Dimethyl ditelluride 32294-60-3P, Diphenyl ditelluride 77129-69-2P, Dibutyl ditelluride  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization initiators with ditellurides)
- IT 78-67-1, AIBN  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization initiators with ditellurides)
- IT 582319-76-4P 791104-08-0P 791104-09-1P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization initiators with ditellurides)
- RN 582319-76-4 HCAPLUS  
 CN Propanenitrile, 2-methyl-2-(methyltelluro)- (9CI) (CA INDEX NAME)



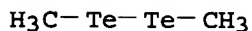
- RN 791104-08-0 HCAPLUS  
 CN Propanenitrile, 2-(butyltelluro)-2-methyl- (9CI) (CA INDEX NAME)



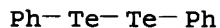
- RN 791104-09-1 HCAPLUS  
 CN Propanenitrile, 2-methyl-2-(phenyltelluro)- (9CI) (CA INDEX NAME)



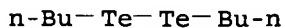
IT 20334-43-4P, Dimethyl ditelluride 32294-60-3P, Diphenyl ditelluride 77129-69-2P, Dibutyl ditelluride  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (manufacture of organotellurium compds. as living radical polymerization initiators by treatment of azo polymerization initiators with ditellurides)  
 RN 20334-43-4 HCAPLUS  
 CN Ditelluride, dimethyl (9CI) (CA INDEX NAME)



RN 32294-60-3 HCAPLUS  
 CN Ditelluride, diphenyl (9CI) (CA INDEX NAME)



RN 77129-69-2 HCAPLUS  
 CN Ditelluride, dibutyl (9CI) (CA INDEX NAME)



L51 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:965297 HCAPLUS  
 DN 141:411400  
 TI Process for production of living-radical polymers and polymers  
 IN Yamago, Shigeru; Yoshida, Junichi; Kameshima, Takashi  
 PA Otsuka Chemical Co., Ltd., Japan  
 SO PCT Int. Appl., 51 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004096870	A1	20041111	WO 2004-JP5989	20040426
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,				

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
SN, TD, TG

PRAI JP 2003-121223 A 20030425

OS MARPAT 141:411400

AB The **polymers** are prepared by **polymerizing** vinyl monomers by using an azo initiator, an organotellurium compound R1TeCR2R3R4 and a ditelluride compound (R1Te)2 [R1 = C1-8 alkyl, (un)substituted aryl, aromatic heterocyclic group; R2, R3 = H, C1-8 alkyl; R4 = (un)substituted aryl, aromatic heterocyclic group, acyl, oxycarbonyl, cyano]. Thus, 10 mmol Me methacrylate was **polymerized** in the presence of AIBN 0.10, dimethylditelluride 0.10, and 2-methyl-2-methyltellurylpropionitrile 0.10 mmol at 60° for 2 h to give 98% PMMA with Mn 9600 and Mw/Mn 1.15.

IC ICM C08F004-00

CC 35-3 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): 29, 67

ST methyl methacrylate living radical **polymn** catalyst; ditelluride living radical **polymn** catalyst; organotellurium compd living radical **polymn** catalyst

IT **Polymerization** catalysts

(living, radical; organotellurium catalysts for preparation of living-radical **polymers**)

IT 2094-98-6, 1,1'-Azobis(1-cyclohexanecarbonitrile)

RL: **CAT** (**Catalyst** use); **USES** (Uses)

(ACHN; organotellurium catalysts for preparation of living-radical **polymers**)

IT 78-67-1, AIBN 2589-57-3, MAIB 2638-94-0, ACVA 10288-28-5, V 30 13472-08-7, AMBN 15545-97-8, V 70

RL: **CAT** (**Catalyst** use); **USES** (Uses)

(organotellurium catalysts for preparation of living-radical **polymers**)

IT 20334-43-4P, Dimethylditelluride 77129-69-2P,

Dibutylditelluride 474094-06-9P 582319-76-4P

658058-35-6P

RL: **CAT** (**Catalyst** use); **IMF** (Industrial manufacture); **PREP**

(**Preparation**); **USES** (Uses)

(organotellurium catalysts for preparation of living-radical **polymers**)

IT 9003-49-0P, Butyl acrylate homopolymer 9003-53-6P, Polystyrene

9003-63-8P, Butyl methacrylate homopolymer 9011-14-7P, PMMA

24991-47-7P, p-Chlorostyrene homopolymer 25034-86-0P, Methyl

methacrylate-styrene copolymer 25038-87-3P, Methyl vinyl ketone

homopolymer 25067-61-2P, Methacrylonitrile homopolymer 25249-16-5P,

2-Hydroxyethyl methacrylate homopolymer 25768-50-7P, Cyclohexyl

methacrylate homopolymer 26355-01-1P, 2-Hydroxyethyl methacrylate-methyl

methacrylate copolymer 26813-25-2P, Methacrylonitrile-methyl

methacrylate copolymer 31074-25-6P, Methyl methacrylate-methyl vinyl

ketone copolymer 64114-51-8P, Isobornyl methacrylate homopolymer

66004-95-3P, N-Isopropylmethacrylamide homopolymer 89558-60-1P,

N-Isopropylacrylamide-N-isopropylmethacrylamide copolymer

RL: **IMF** (Industrial manufacture); **PREP** (**Preparation**)

(organotellurium catalysts for preparation of living-radical **polymers**)

IT 78-82-0, Isobutyronitrile 109-72-8, Butyllithium, reactions 600-00-0,

Ethyl 2-bromoisobutyrate 13494-80-9, Tellurium, reactions 41658-69-9,

2-Bromo-2-methylpropionitrile

RL: **RCT** (**Reactant**); **RACT** (**Reactant** or reagent)

(organotellurium catalysts for preparation of living-radical **polymers**)

IT 20334-43-4P, Dimethylditelluride 77129-69-2P,

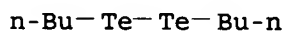
Dibutylditelluride 474094-06-9P 582319-76-4P  
658058-35-6P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(organotellurium catalysts for preparation of living-radical  
polymers)

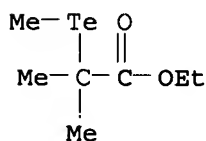
RN 20334-43-4 HCAPLUS  
CN Ditelluride, dimethyl (9CI) (CA INDEX NAME)



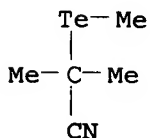
RN 77129-69-2 HCAPLUS  
CN Ditelluride, dibutyl (9CI) (CA INDEX NAME)



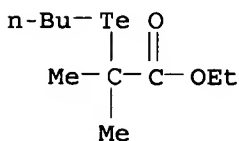
RN 474094-06-9 HCAPLUS  
CN Propanoic acid, 2-methyl-2-(methyltelluro)-, ethyl ester (9CI) (CA INDEX NAME)



RN 582319-76-4 HCAPLUS  
CN Propanenitrile, 2-methyl-2-(methyltelluro)- (9CI) (CA INDEX NAME)



RN 658058-35-6 HCAPLUS  
CN Propanoic acid, 2-(butyltelluro)-2-methyl-, ethyl ester (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2004:606518 HCAPLUS

DN 141:158625

TI Hybrid antifouling coating compositions and methods for preventing the fouling of surfaces subjected to a marine environment

IN Detty, Michael R.; Drake, Michael D.; Tang, Ying; Bright, Frank V.

PA The Research Foundation of State University of New York, USA

SO PCT Int. Appl., 137 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004063292	A2	20040729	WO 2004-US348	20040107
	WO 2004063292	A3	20050224		
	W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ			
	US 2005013843	A1	20050120	US 2004-753926	20040107
PRAI	US 2003-438558P	P	20030107		

OS MARPAT 141:158625

AB The present invention relates to a coating composition including a sol-gel matrix and a dendrimeric organochalcogeno derivative and a system including the coating composition and a substrate. The present invention also relates to a method of preventing fouling of surfaces subjected to a marine environment. Thus, 0.592 g 3,5-bis(3-hydroxypropyloxy)benzyl benzoate (preparation given) and 0.38 mL methanesulfonyl chloride were reacted at 0° in the presence of lithium bromide to give 0.69 g 3,5-bis(3-bromopropyloxy)benzyl benzoate, 0.43 g of which was added in a solution obtained from 0.10 g sodium bromide and 0.539 g di-Ph ditelluride, refluxed for 20 h to give 0.54 g 3,5-bis[3-(phenyltelluro)propyloxy]benzyl alc.; the resulting dendritic derivative was incorporated in a propyltrimethoxysilane-tetramethylorthosililane sol-gel, and cast into a film with water contact angle 92° and good antifouling property.

IC ICM C09D

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 25

ST hybrid antifouling coating compn marine environment;  
propyltrimethoxysilane tetramethylorthosililane copolymer  
bisphenyltelluropropyloxybenzyl alc coating compn

IT Coating materials

(antifouling, marine; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Coating materials

(antifouling; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Polyethers, uses

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(dendrimers; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Coating process

(dip; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Glass substrates

Oxidation catalysts

Sol-gel processing



Spore  
Xerogels  
    (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Dendritic polymers  
Enzymes, uses  
RL: CAT (Catalyst use); USES (Uses)  
    (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Silicates, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
    (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Dendritic polymers  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
    (polyethers; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Silsesquioxanes  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
    (silicate-, fluorine-containing; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Silsesquioxanes  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
    (silicate-; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Fluoropolymers, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
    (silicate-silsesquioxane-; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Silicates, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
    (silsesquioxane-; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Coating process  
    (spray; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

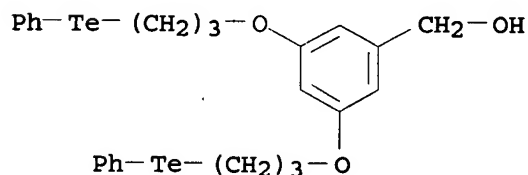
IT Wood  
    (substrates; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Metals, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
    (substrates; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

IT Spore  
    (zospore; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

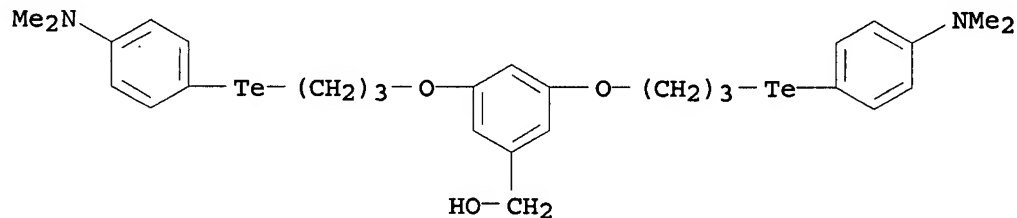
IT 69279-19-2  
RL: CAT (Catalyst use); USES (Uses)  
    (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)

- IT 573701-64-1P 573701-65-2P 573701-66-3P  
 573701-67-4P 573701-68-5P 573701-69-6P  
 573701-70-9P 573701-71-0P 573701-72-1P  
 573701-73-2P 573701-74-3P 573701-75-4P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 159728-56-0P 164740-43-6P, Propyltrimethoxysilane-tetramethoxysilane copolymer 167637-55-0P 728042-30-6P 728042-31-7P 728042-32-8P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 11099-06-2, Tetraethoxysilane homopolymer 12002-26-5, Tetramethoxysilane homopolymer  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 124-63-0, Methanesulfonyl chloride  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 573701-53-8P 573701-54-9P 573701-55-0P 573701-56-1P 573701-57-2P  
 573701-58-3P 573701-59-4P 573701-60-7P 573701-61-8P 573701-62-9P  
 573701-63-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate in dendritic derivative preparation; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 93-97-0, Benzoic anhydride 99-24-1, Methyl gallate 586-77-6, 4-Bromo-N,N-dimethylaniline 588-63-6, 1-Bromo-3-phenoxypropane 13494-80-9, Tellurium, reactions 32294-60-3, Diphenyl ditelluride 59130-74-4, Bis(4-dimethylaminophenyltelluride) 79971-83-8, Dihexyl ditelluride 89031-84-5, 1-Bromo-3-(tert-butyltrimethylsilyloxy)propane 247122-94-7 247123-01-9 324077-06-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in dendritic derivative preparation; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- IT 573701-64-1P 573701-65-2P 573701-66-3P  
 573701-67-4P 573701-68-5P 573701-69-6P  
 573701-70-9P 573701-71-0P 573701-72-1P  
 573701-73-2P 573701-74-3P 573701-75-4P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)
- RN 573701-64-1 HCAPLUS  
 CN Benzenemethanol, 3,5-bis[3-(phenyltelluro)propoxy] - (9CI) (CA INDEX NAME)



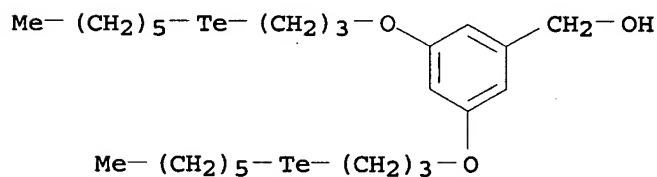
RN 573701-65-2 HCAPLUS

CN Benzenemethanol, 3,5-bis[3-[[4-(dimethylamino)phenyl]telluro]propoxy] - (9CI) (CA INDEX NAME)



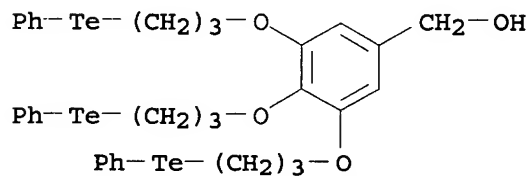
RN 573701-66-3 HCAPLUS

CN Benzenemethanol, 3,5-bis[3-(hexyltelluro)propoxy] - (9CI) (CA INDEX NAME)



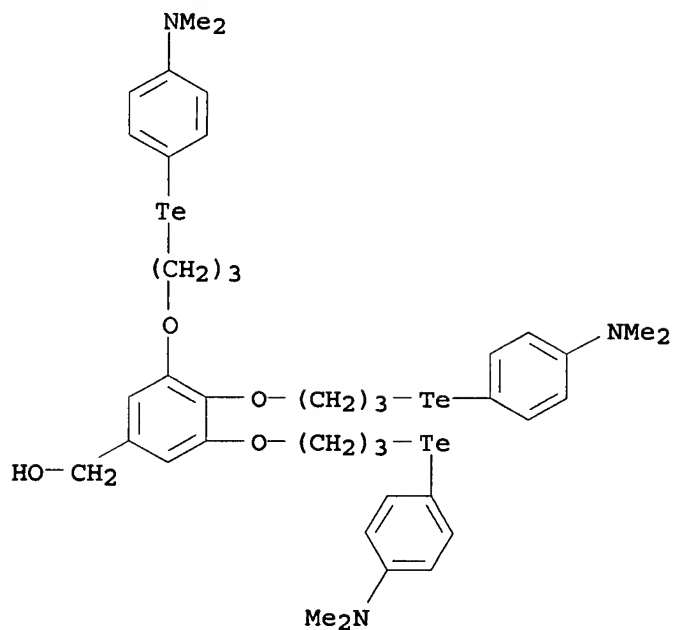
RN 573701-67-4 HCAPLUS

CN Benzenemethanol, 3,4,5-tris[3-(phenyltelluro)propoxy] - (9CI) (CA INDEX NAME)



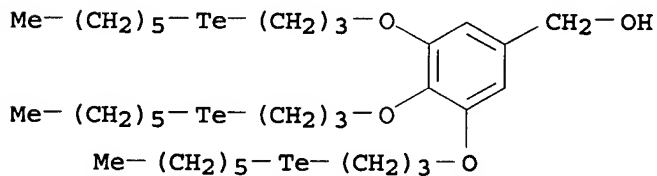
RN 573701-68-5 HCAPLUS

CN Benzenemethanol, 3,4,5-tris[3-[[4-(dimethylamino)phenyl]telluro]propoxy] - (9CI) (CA INDEX NAME)



RN 573701-69-6 HCAPLUS

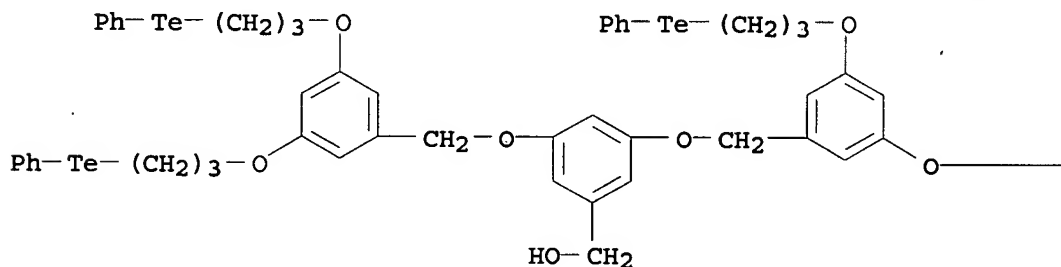
CN Benzenemethanol, 3,4,5-tris[3-(hexyltelluro)propoxy]-(9CI) (CA INDEX NAME)



RN 573701-70-9 HCAPLUS

CN Benzenemethanol, 3,5-bis[[3,5-bis[3-(phenyltelluro)propoxy]phenyl]methoxy]-(9CI) (CA INDEX NAME)

PAGE 1-A



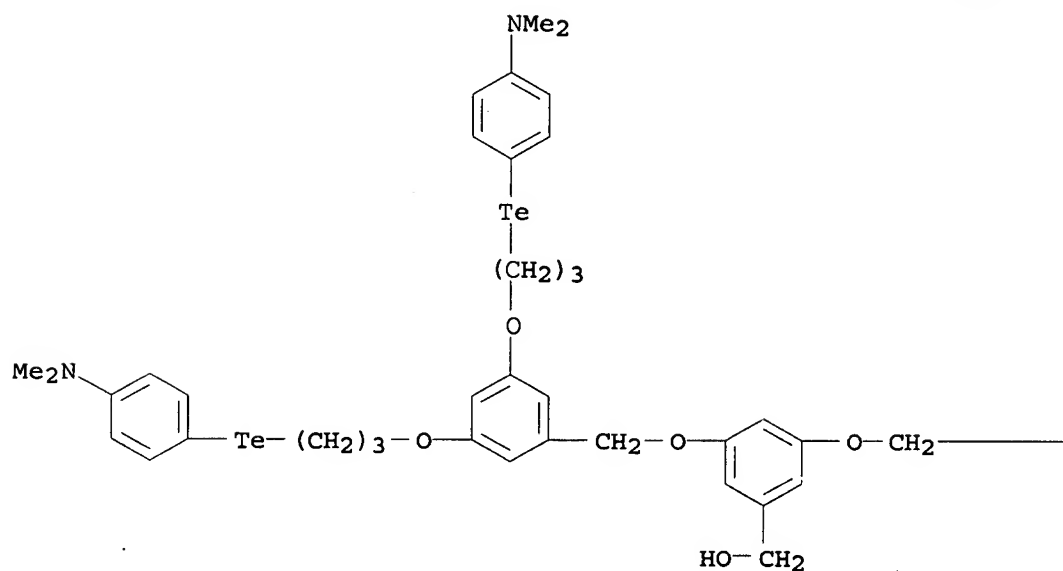
PAGE 1-B

 $-(CH_2)_3-Te-Ph$ 

RN 573701-71-0 HCAPLUS

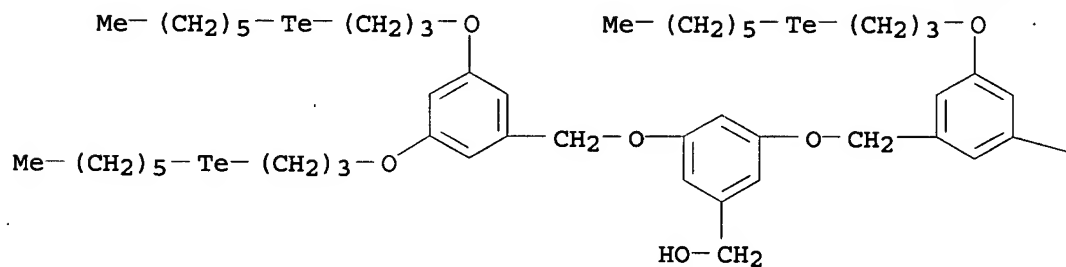
CN Benzenemethanol, 3,5-bis[[3,5-bis[3-[[4-(dimethylamino)phenyl]telluro]propoxy]phenyl]methoxy] - (9CI) (CA INDEX NAME)

PAGE 1-A



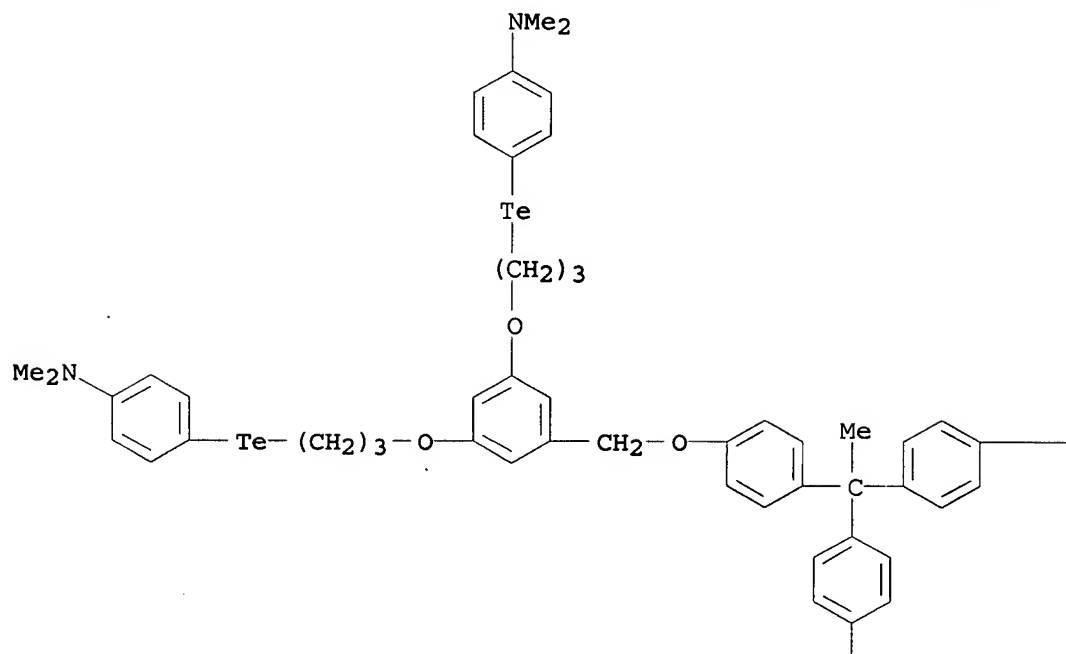
CN(C)c1ccc(cc1)TeCCCCOc2ccc(cc2)OCCCCTeCc3ccc(cc3)N(C)C

PAGE 1-A

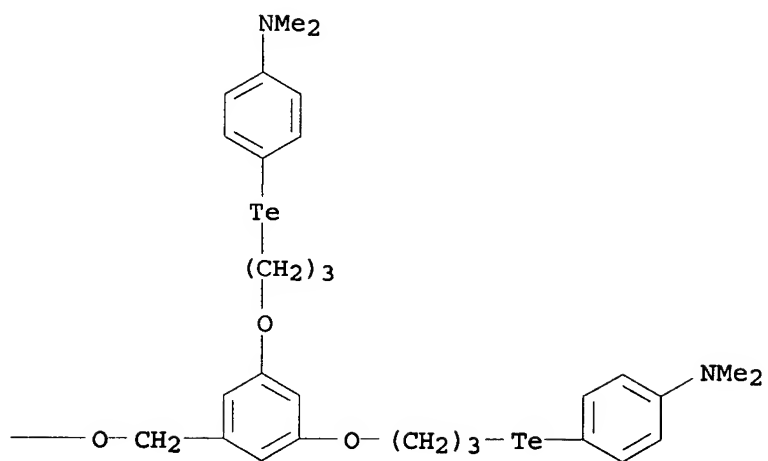

$$\text{—O—(CH}_2\text{)}_3\text{—Te—(CH}_2\text{)}_5\text{—Me}$$

RN	573701-73-2	HCAPLUS
CN	Benzenamine, 4,4',4'',4''',4''''',4''''''-[ethylidynetris[4,1-phenyleneoxymethylene-5,1,3-benzenetriylbis(oxy-3,1-propanediyltelluro)]]hexakis[N,N-dimethyl- (9CI) (CA INDEX NAME)	

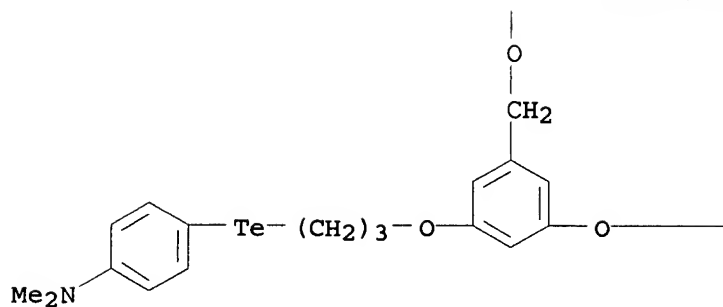
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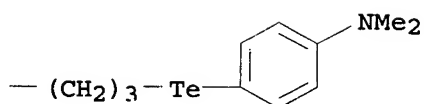
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PAGE 2-A

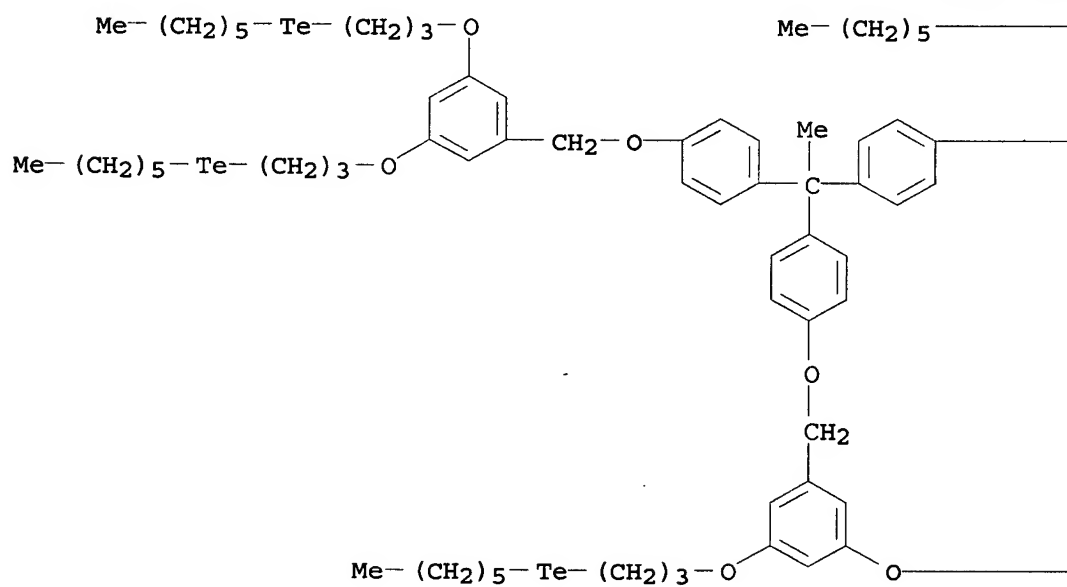


PAGE 2-B



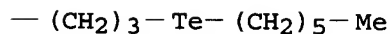
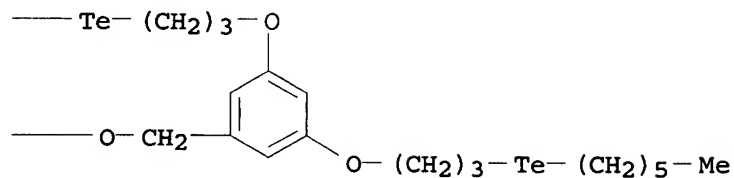
RN 573701-74-3 HCAPLUS  
 CN Benzene, 1,1',1''-ethylidynetris[4-[[3,5-bis[3-(hexyltelluro)propoxy]phenyl]methoxy]-(9CI) (CA INDEX NAME)

PAGE 1-A

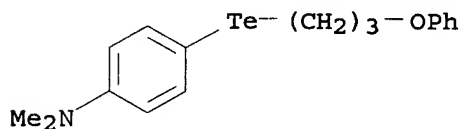




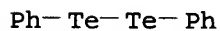
PAGE 1-B



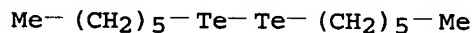
RN 573701-75-4 HCAPLUS  
 CN Benzenamine, N,N-dimethyl-4-[(3-phenoxypropyl)telluro]- (9CI) (CA INDEX NAME)



IT 32294-60-3, Diphenyl ditelluride 79971-83-8, Dihexyl ditelluride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in dendritic derivative preparation; hybrid antifouling coating compns. containing dendritic derivs. as oxidation catalysts)  
 RN 32294-60-3 HCAPLUS  
 CN Ditelluride, diphenyl (9CI) (CA INDEX NAME)



RN 79971-83-8 HCAPLUS  
 CN Ditelluride, dihexyl (9CI) (CA INDEX NAME)



L51 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:143194 HCAPLUS  
 DN 140:181982

TI Process for production of living radical **polymers** and block **polymers**

IN Yamago, ~~Shigeru~~; Yoshida, Junichi

PA ~~Otsuka~~ Chemical Co., Ltd., Japan

SO PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

*applicants*

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004014962	A1	20040219	WO 2003-JP10116	20030808
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2494983	AA	20040219	CA 2003-2494983	20030808
	EP 1541592	A1	20050615	EP 2003-784600	20030808
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI	JP 2002-231917	A	20020808		
	WO 2003-JP10116	W	20030808		

OS MARPAT 140:181982

AB Vinyl monomers (e.g., MMA, styrene) are **polymerized** by using living radical **polymerization** initiators R1TeCR2R3R4 and (R1Te)2 [R1 = C1-8 alkyl, (un)substituted aryl, aromatic heterocyclic group; R2, R3 = H, C1-8 alkyl; R4 = (un)substituted aryl, aromatic heterocyclic group, acyl, oxycarbonyl, cyano]. The initiators enable precise control of mol. weight and mol.-weight distribution under mild conditions. Thus, poly(Me methacrylate) (Mn 9000, Mw/Mn 1.18) was prepared by using (1-methyltelluranylethyl)benzene and di-Me ditelluride as initiators.

IC ICM C08F004-00

ICS C08F297-00

CC 35-3 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): 29, 67

ST tellurium compd living **polymn** catalyst methyl methacrylate;

styrene living **polymn** catalyst tellurium compd

IT **Polymerization** catalysts

(living, radical; organotellurium compds. as living radical **polymerization** catalysts for preparation of **polymers** and block **polymers**)

IT 20334-43-4P, Dimethyl ditelluride 32294-60-3P, Diphenyl

ditelluride 77129-69-2P, Dibutyl ditelluride

415679-75-3P 474094-06-9P 658058-30-1P

658058-31-2P 658058-32-3P 658058-33-4P

658058-34-5P 658058-35-6P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP

(Preparation); USES (Uses)

(organotellurium compds. as living radical **polymerization** catalysts for preparation of **polymers** and block **polymers**)

IT 9003-42-3P, Ethyl methacrylate homopolymer 9003-53-6P, Styrene

homopolymer 9011-14-7P, PMMA 24991-47-7P, Poly(p-chlorostyrene)

25034-86-0P, Methyl methacrylate-styrene copolymer 25038-87-3P,

Poly(methyl vinyl ketone) 25067-61-2P, Polymethacrylonitrile

25249-16-5P, 2-Hydroxyethyl methacrylate homopolymer 28554-25-8P,  
Poly(N-methylmethacrylamide) 106911-77-7P, Methyl methacrylate-styrene  
block copolymer 131589-87-2P, tert-Butyl acrylate-methyl methacrylate  
block copolymer 137317-43-2P, tert-Butyl acrylate-methyl  
methacrylate-styrene block copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
(organotellurium compds. as living radical **polymerization** catalysts  
for preparation of **polymers** and block **polymers**)

IT 109-72-8, Butyllithium, reactions 585-71-7, 1-Bromoethylbenzene  
600-00-0, Ethyl 2-bromoisobutyrate 652-28-8 14804-61-6,  
1-(1-Bromoethyl)-4-chlorobenzene 55214-85-2 68120-42-3 160376-84-1

RL: RCT (Reactant); RACT (Reactant or reagent)  
(organotellurium compds. as living radical **polymerization** catalysts  
for preparation of **polymers** and block **polymers**)

IT 20334-43-4P, Dimethyl ditelluride 32294-60-3P, Diphenyl  
ditelluride 77129-69-2P, Dibutyl ditelluride  
415679-75-3P 474094-06-9P 658058-30-1P  
658058-31-2P 658058-32-3P 658058-33-4P  
658058-34-5P 658058-35-6P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(organotellurium compds. as living radical **polymerization** catalysts  
for preparation of **polymers** and block **polymers**)

RN 20334-43-4 HCAPLUS  
CN Ditelluride, dimethyl (9CI) (CA INDEX NAME)

H<sub>3</sub>C-Te-Te-CH<sub>3</sub>

RN 32294-60-3 HCAPLUS  
CN Ditelluride, diphenyl (9CI) (CA INDEX NAME)

Ph-Te-Te-Ph

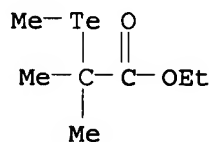
RN 77129-69-2 HCAPLUS  
CN Ditelluride, dibutyl (9CI) (CA INDEX NAME)

n-Bu-Te-Te-Bu-n

RN 415679-75-3 HCAPLUS  
CN Benzene, [1-(methyltelluro)ethyl]- (9CI) (CA INDEX NAME)

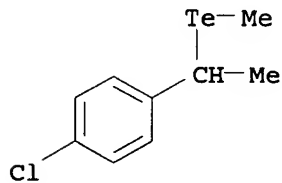
Ph  
|  
Me-Te-CH-Me

RN 474094-06-9 HCAPLUS  
CN Propanoic acid, 2-methyl-2-(methyltelluro)-, ethyl ester (9CI) (CA INDEX  
NAME)



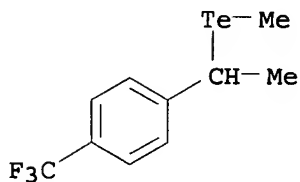
RN 658058-30-1 HCAPLUS

CN Benzene, 1-chloro-4-[1-(methyltelluro)ethyl] - (9CI) (CA INDEX NAME)



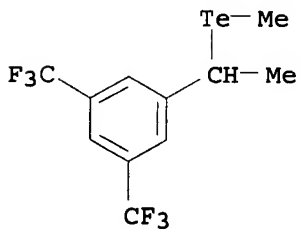
RN 658058-31-2 HCAPLUS

CN Benzene, 1-[1-(methyltelluro)ethyl]-4-(trifluoromethyl)- (9CI) (CA INDEX NAME)



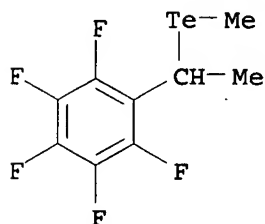
RN 658058-32-3 HCAPLUS

CN Benzene, 1-[1-(methyltelluro)ethyl]-3,5-bis(trifluoromethyl)- (9CI) (CA  
INDEX NAME)



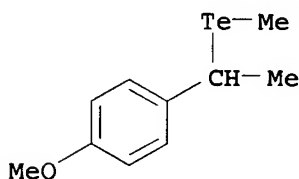
RN 658058-33-4 HCAPLUS

CN Benzene, pentafluoro[1-(methyltelluro)ethyl]- (9CI) (CA INDEX NAME)



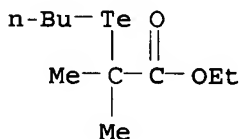
RN 658058-34-5 HCAPLUS

CN Benzene, 1-methoxy-4-[1-(methyltelluro)ethyl]- (9CI) (CA INDEX NAME)



RN 658058-35-6 HCAPLUS

CN Propanoic acid, 2-(butyltelluro)-2-methyl-, ethyl ester (9CI) (CA INDEX NAME)



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:439007 HCAPLUS

DN 139:149377

TI Dendrimeric Organotelluride Catalysts for the Activation of Hydrogen Peroxide. Improved Catalytic Activity through Statistical and Stereoelectronic Effects

AU Ahsan, Khalid; Drake, Michael D.; Higgs, Donald E.; Wojciechowski, Amy L.; Tse, Brian N.; Bateman, Margaret A.; You, Youngjae; Detty, Michael R.

CS Department of Chemistry, University at Buffalo, Buffalo, NY, 14260, USA

SO Organometallics (2003), 22(14), 2883-2890

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 139:149377

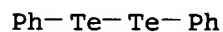
AB Dendrimeric polyorganotellurides are prepared in high yield using propyloxy spacers to connect the organotelluride groups to the core mols. The polyorganotellurides catalyze the oxidation of thiophenol with hydrogen peroxide to give di-Ph disulfide in homogeneous solns. (5% CH<sub>2</sub>Cl<sub>2</sub>/MeOH or 46% CH<sub>2</sub>Cl<sub>2</sub>/MeOH). The polyorganotellurides with two, three, four, and six catalytic groups show roughly statistical increases for the number of catalytic groups relative to the corresponding monotellurides. Catalysts

containing [4-(dimethylamino)phenyl]telluro groups and n-hexyltelluro groups are oxidized more rapidly by hydrogen peroxide and also show greater catalytic activity than the corresponding catalysts containing phenyltelluro groups. A combination of statistical effects and stereoelectronic effects give a 26-fold increase in catalytic activity from 1-phenoxy-3-(phenyltelluro)propane (23a;  $v_0 = 12 \mu\text{M min}^{-1}$ ) to dendrimer 1,1,1-tris[4-[3,5-bis[3-(hexyltelluro)propoxy]phenylmethoxy]phenyl]ethane (22c) with six hexyltelluro groups ( $v_0 = 312 \mu\text{M min}^{-1}$ ) for the oxidation of  $1.0 + 10^{-3} \text{ M PhSH}$  with  $3.75 + 10^{-3} \text{ M H}_2\text{O}_2$  in the presence of  $1.0 + 10^{-5} \text{ M}$  catalyst.

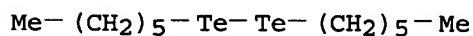
- CC 25-14 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 35, 67
- ST telluride dendrimer propoxy spacer prepn catalyst thiophenol oxidn;  
hydrogen peroxide oxidn thiophenol telluride catalyst dendrimer prepn;  
statistical stereoelectronic effect catalytic activity telluride dendrimer  
thiophenol oxidn
- IT Stereoelectronic effect  
(on catalytic activity of telluride dendrimers in hydrogen peroxide  
oxidation of thiophenol)
- IT Ethers, preparation  
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic  
preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyorganotellurides; preparation of telluride dendrimers and their  
catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT Oxidation catalysts  
(preparation of telluride dendrimers and their catalytic activity in  
hydrogen peroxide oxidation of thiophenol)
- IT Dendritic polymers  
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(preparation of telluride dendrimers and their catalytic activity in  
hydrogen peroxide oxidation of thiophenol)
- IT 32294-60-3, Diphenylditelluride 79971-83-8  
108743-34-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation; preparation of telluride dendrimers and their catalytic  
activity in hydrogen peroxide oxidation of thiophenol)
- IT 89031-84-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(aryloxylation; preparation of telluride dendrimers and their catalytic  
activity in hydrogen peroxide oxidation of thiophenol)
- IT 93-97-0, Benzoic anhydride 247122-94-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(benzoylation; preparation of telluride dendrimers and their catalytic  
activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-54-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(benzoylation; preparation of telluride dendrimers and their catalytic  
activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-58-3P 573701-59-4P 573701-60-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(bromination; preparation of telluride dendrimers and their catalytic  
activity in hydrogen peroxide oxidation of thiophenol)
- IT 882-33-7, Diphenyl disulfide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(catalytic oxidation product; preparation of telluride dendrimers and their  
catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 108-98-5, Benzenethiol, reactions

- RL: RCT (Reactant); RACT (Reactant or reagent)  
(catalytic oxidation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-55-0P 573701-56-1P 573701-57-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(deprotection; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 99-24-1, Methyl gallate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(etherification; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 324077-09-0  
RL: CAT (Catalyst use); USES (Uses)  
(hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-64-1P 573701-65-2P 573701-66-3P  
573701-67-4P 573701-68-5P 573701-69-6P  
573701-70-9P 573701-71-0P 573701-72-1P  
573701-73-2P 573701-74-3P  
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 158734-99-7 324077-07-8  
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(oxidation kinetics, hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-75-4P  
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
(oxidation kinetics, hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 247123-01-9 324077-06-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-53-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(reduction; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 586-77-6, 4-Bromo-N,N-dimethylaniline 588-63-6, 1-Bromo-3-phenoxypropane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(telluration; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 573701-61-8P 573701-62-9P 573701-63-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(telluration; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)
- IT 32294-60-3, Diphenylditelluride 79971-83-8  
108743-34-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkylation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)

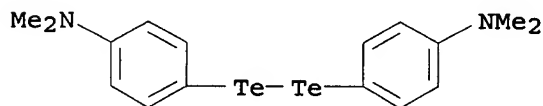
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RN 79971-83-8 HCAPLUS  
 CN Ditelluride, dihexyl (9CI) (CA INDEX NAME)

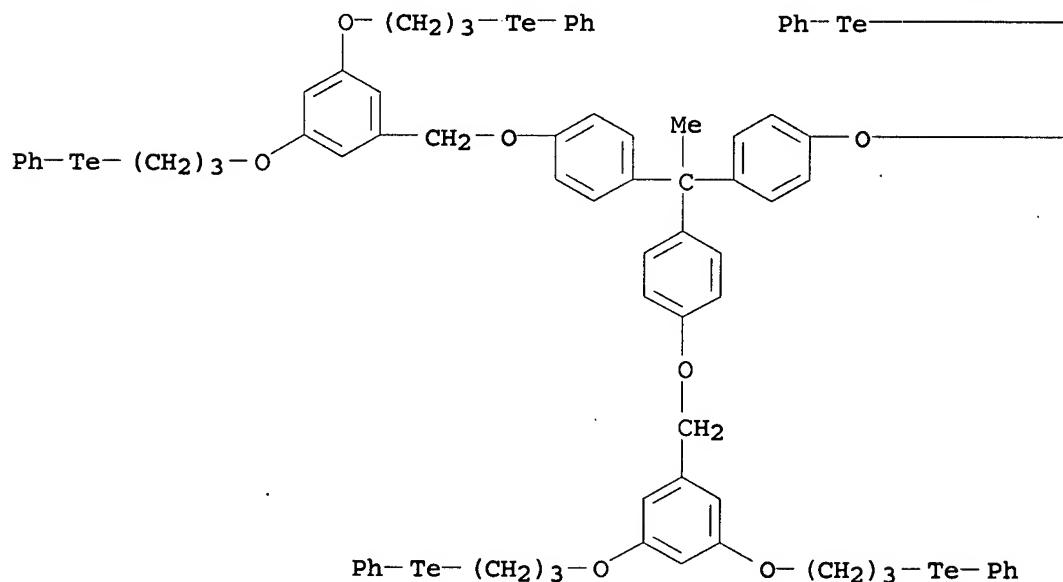


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 CN Benzenamine, 4,4'-ditellurobis[N,N-dimethyl- (9CI) (CA INDEX NAME)



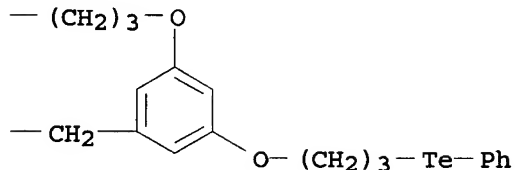
IT 324077-09-0  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)  
 RN 324077-09-0 HCAPLUS  
 CN Benzene, 1,1',1''-ethylidynetris[4-[[3,5-bis[3-(phenyltelluro)propoxy]phenyl]methoxy]- (9CI) (CA INDEX NAME)

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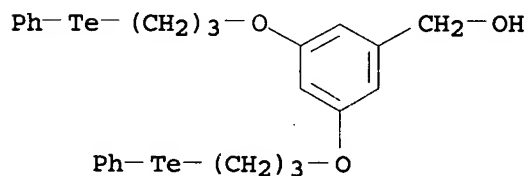
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RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)

(hydrogen peroxide activation; preparation of telluride dendrimers and their  
 catalytic activity in hydrogen peroxide oxidation of thiophenol)

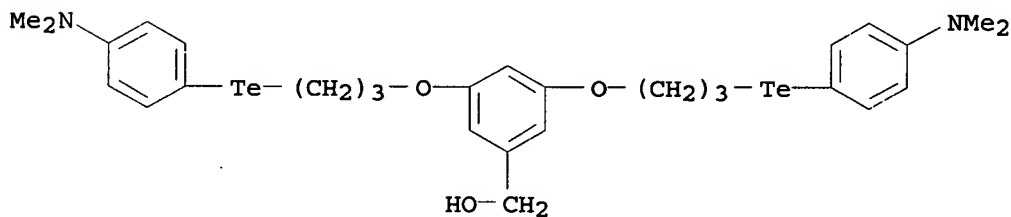
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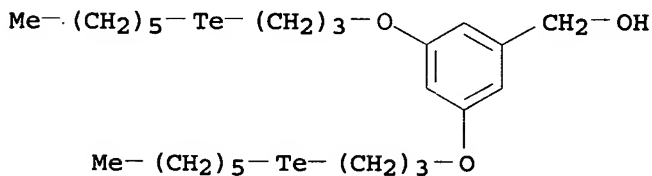
RN 573701-65-2 HCAPLUS

CN Benzenemethanol, 3,5-bis[3-[[4-(dimethylamino)phenyl]telluro]propoxy] -  
 (9CI) (CA INDEX NAME)



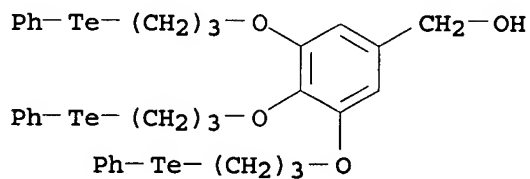
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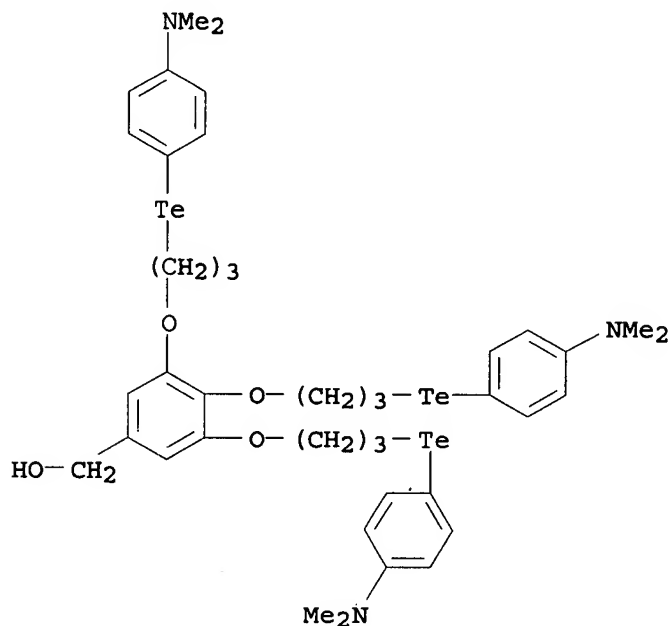


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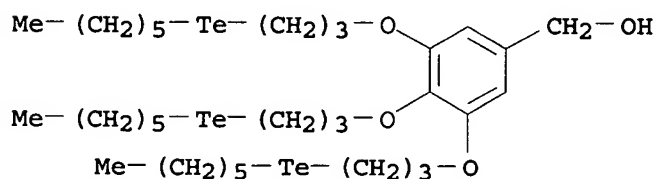
CN Benzenemethanol, 3,4,5-tris[3-(phenyltelluro)propoxy] - (9CI) (CA INDEX  
 NAME)



RN 573701-68-5 HCAPLUS  
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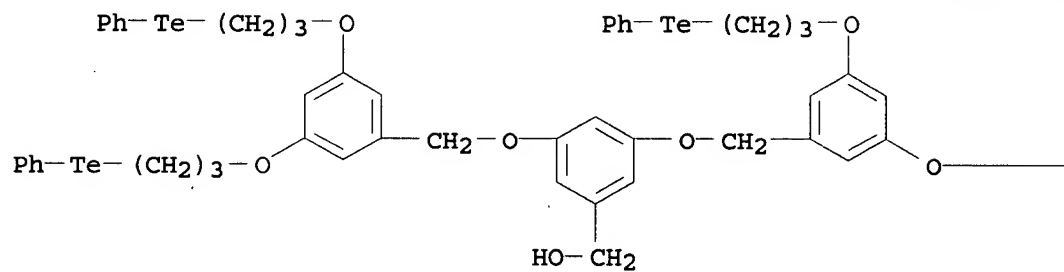


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RN 573701-70-9 HCAPLUS  
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PAGE 1-A



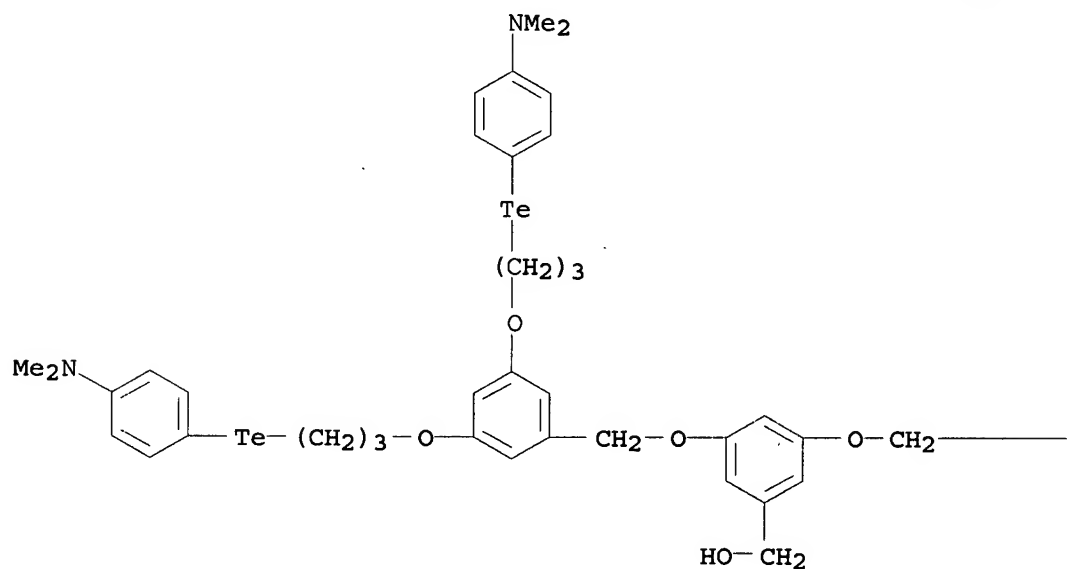
PAGE 1-B

 $-(\text{CH}_2)_3-\text{Te}-\text{Ph}$ 

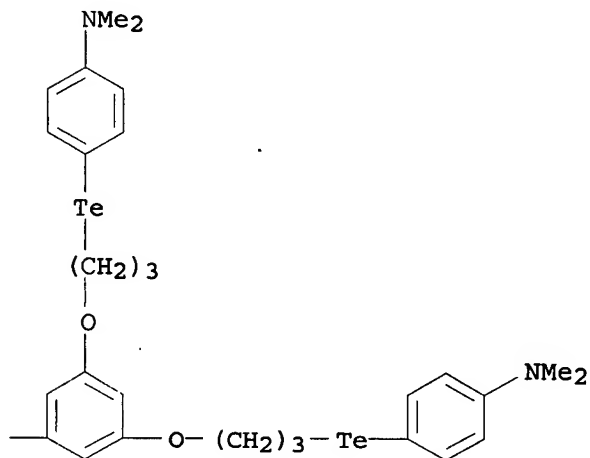
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CN Benzenemethanol, 3,5-bis[[3,5-bis[3-[[4-(dimethylamino)phenyl]telluro]propoxy]phenyl]methoxy] - (9CI) (CA INDEX NAME)

PAGE 1-A

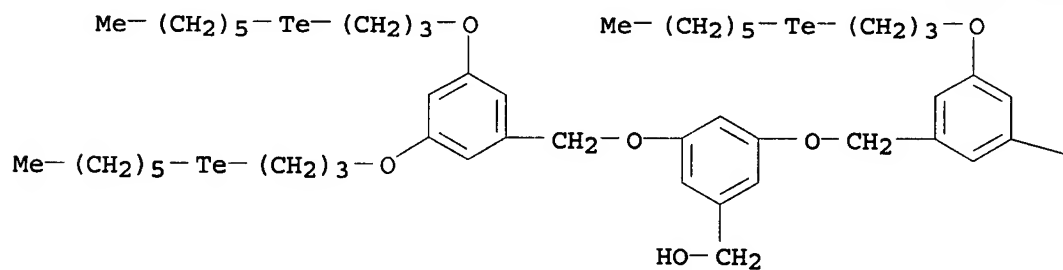


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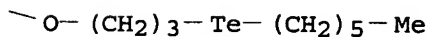


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PAGE 1-A

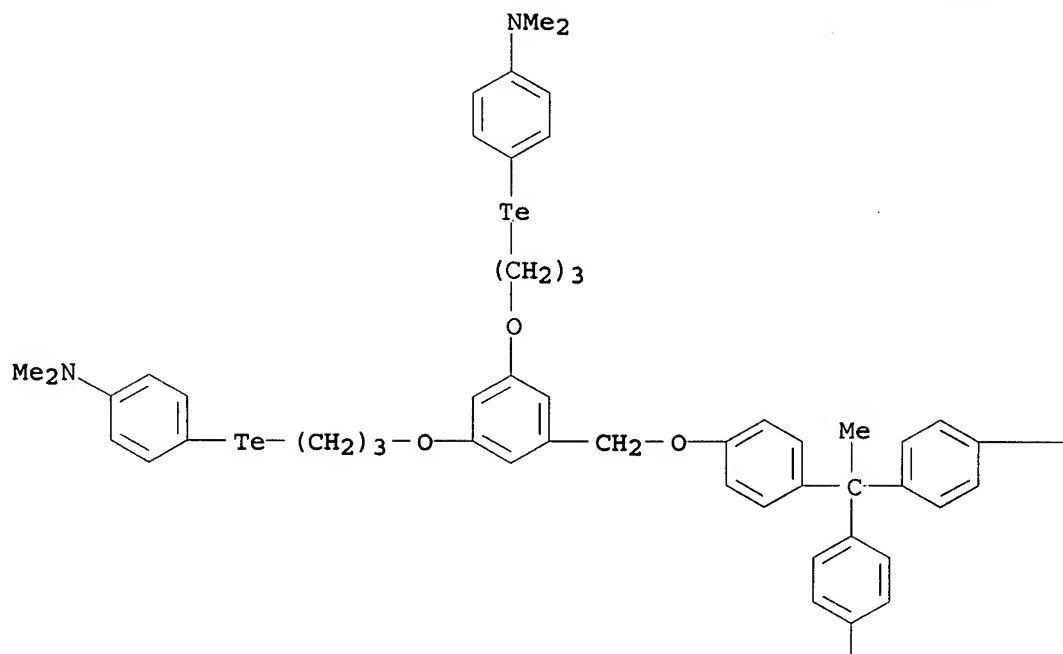


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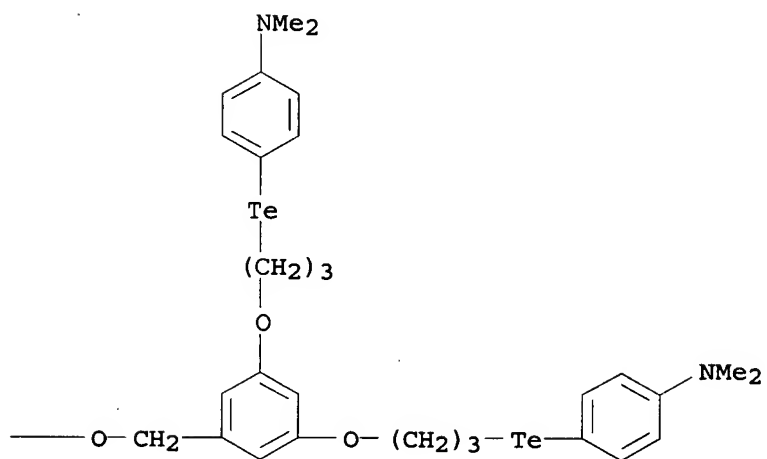


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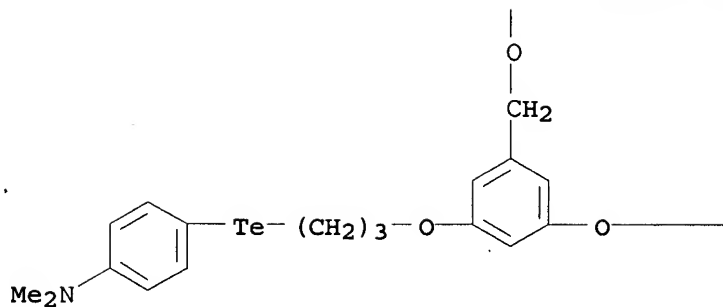
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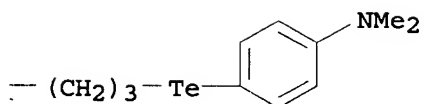
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PAGE 2-A

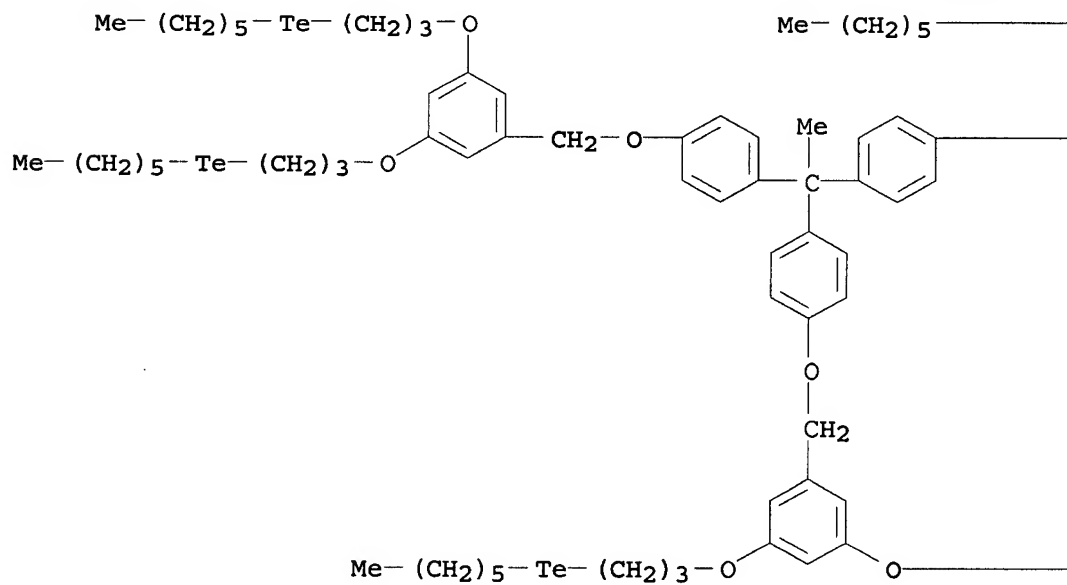


PAGE 2-B

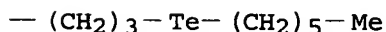
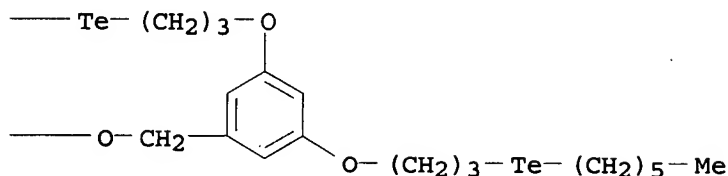


RN 573701-74-3 HCAPLUS  
 CN Benzene, 1,1',1''-ethylidynetris[4-[[3,5-bis[3-(hexyltelluro)propoxy]phenyl]methoxy]-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

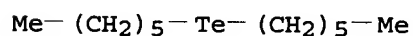


IT 158734-99-7 324077-07-8

RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (oxidation kinetics, hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)

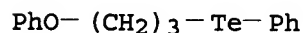
RN 158734-99-7 HCAPLUS

CN Hexane, 1,1'-tellurobis- (9CI) (CA INDEX NAME)



RN 324077-07-8 HCAPLUS

CN Benzene, [(3-phenoxypropyl)telluro]- (9CI) (CA INDEX NAME)

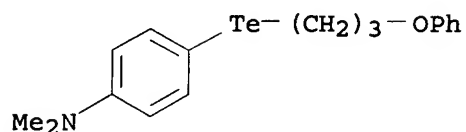


IT 573701-75-4P

RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process); USES (Uses)  
 (oxidation kinetics, hydrogen peroxide activation; preparation of telluride dendrimers and their catalytic activity in hydrogen peroxide oxidation of thiophenol)

RN 573701-75-4 HCAPLUS

CN Benzenamine, N,N-dimethyl-4-[(3-phenoxypropyl)telluro]- (9CI) (CA INDEX NAME)

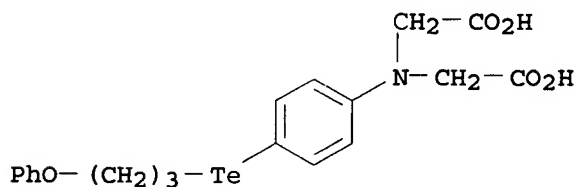


RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L51 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:14331 HCAPLUS  
DN 134:222274  
TI Iodination of Organic Substrates with Halide Salts and H<sub>2</sub>O<sub>2</sub> Using an Organotelluride Catalyst  
AU Higgs, Donald E.; Nelen, Marina I.; Detty, Michael R.  
CS Department of Chemistry Division of Medicinal Chemistry, State University of New York at Buffalo, Buffalo, NY, 14260, USA  
SO Organic Letters (2001), 3(3), 349-352  
CODEN: ORLEF7; ISSN: 1523-7060  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 134:222274  
AB Organotelluride 4-[(NaO<sub>2</sub>CCH<sub>2</sub>)<sub>2</sub>N]C<sub>6</sub>H<sub>4</sub>TeCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OPh is a water-soluble catalyst for the oxidation of iodide with hydrogen peroxide in pH 6 phosphate buffer. In two-phase systems, organic substrates are efficiently iodinated using 0.8 mol % of catalyst. Water-soluble substrates are iodinated without an organic cosolvent. E.g., iodination of 4-pentenoic acid gave 94% 5-iodo-γ-valerolactone.  
CC 21-2 (General Organic Chemistry)  
ST iodination org compd organotelluride catalyst; telluride organo catalyst  
iodination org compd  
IT Bromination  
Bromination catalysts  
(bromination of organic substrates with NaBr and H<sub>2</sub>O<sub>2</sub> using an organotelluride catalyst)  
IT Iodination  
Iodination catalysts  
(iodination of organic substrates with halide salts and H<sub>2</sub>O<sub>2</sub> using an organotelluride catalyst)  
IT Regiochemistry  
(of iodination of organic substrates with halide salts and H<sub>2</sub>O<sub>2</sub> using an organotelluride catalyst)  
IT 1131-40-4P 32730-32-8P 78181-02-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(bromination of organic substrates with NaBr and H<sub>2</sub>O<sub>2</sub> using an organotelluride catalyst)  
IT 329311-06-0P  
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(iodination of organic substrates with halide salts and H<sub>2</sub>O<sub>2</sub> using an organotelluride catalyst)  
IT 92-53-5, 4-Phenylmorpholine 121-69-7, N,N-Dimethylaniline, reactions  
588-63-6, 1-Bromo-3-phenoxypropane 591-80-0, 4-Pentenoic acid  
621-23-8, 1,3,5-Trimethoxybenzene 821-09-0, 4-Penten-1-ol 6966-03-6  
18294-87-6, 1-Cyclohexene-1-acetic acid 25350-31-6 55932-12-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iodination of organic substrates with halide salts and H<sub>2</sub>O<sub>2</sub> using an

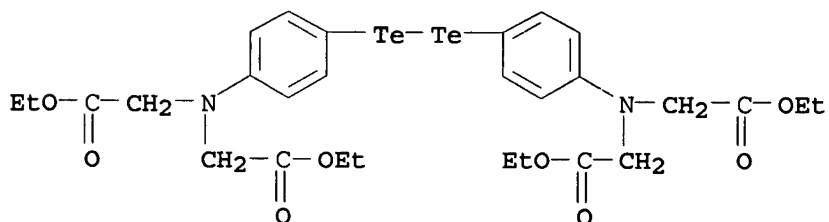


organotelluride catalyst)  
 IT 329311-07-1P 329311-08-2P 329368-37-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (iodination of organic substrates with halide salts and H2O2 using an organotelluride catalyst)  
 IT 698-70-4P 1729-32-4P 2510-49-8P 5831-70-9P 53560-49-9P  
 54486-99-6P 87350-77-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (iodination of organic substrates with halide salts and H2O2 using an organotelluride catalyst)  
 IT 329311-06-0P  
 RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (iodination of organic substrates with halide salts and H2O2 using an organotelluride catalyst)  
 RN 329311-06-0 HCAPLUS  
 CN Glycine, N-(carboxymethyl)-N-[4-[(3-phenoxypropyl)telluro]phenyl]-, disodium salt (9CI) (CA INDEX NAME)

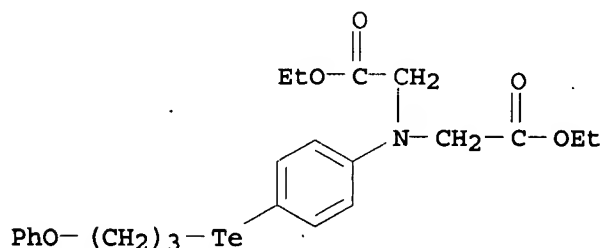


●2 Na

IT 329311-07-1P 329311-08-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (iodination of organic substrates with halide salts and H2O2 using an organotelluride catalyst)  
 RN 329311-07-1 HCAPLUS  
 CN Glycine, N,N'-(ditellurodi-4,1-phenylene)bis[N-(2-ethoxy-2-oxoethyl)-, diethyl ester (9CI) (CA INDEX NAME)

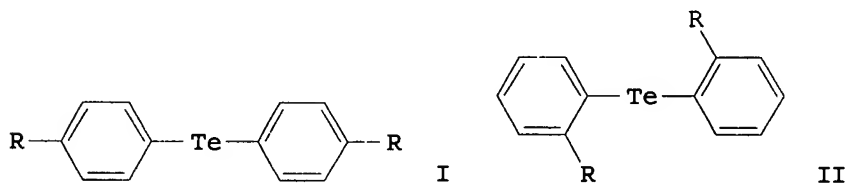


RN 329311-08-2 HCAPLUS  
 CN Glycine, N-(2-ethoxy-2-oxoethyl)-N-[4-[(3-phenoxypropyl)telluro]phenyl]-, ethyl ester (9CI) (CA INDEX NAME)



RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 1994:434585 HCAPLUS  
DN 121:34585  
TI Thiol Peroxidase Activity of Diorganyl Tellurides  
AU Engman, Lars; Stern, David; Pelcman, Mikael; Andersson, Carl M.  
CS Department of Organic Chemistry, Royal Institute of Technology, Stockholm, S-100 44, Swed.  
SO Journal of Organic Chemistry (1994), 59(8), 1973-9  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
OS CASREACT 121:34585  
GI



AB A number of diorganyl tellurides, including diaryl tellurides, diheteroaryl tellurides, and alkyl aryl and dialkyl tellurides, were found to catalyze the reaction of hydrogen peroxide with thiols. The thiol peroxidase activity of the compds. was assessed by using a <sup>1</sup>H NMR method previously developed in the authors' labs. In this assay, thiols (N-acetylcysteine, tert-Bu mercaptan, and 1-octyl mercaptan) were oxidized in the presence of hydrogen peroxide and catalyst (0.3 mol %) and the time required to reduce the thiol concentration with 50%, t<sub>50</sub>, determined. In a series of 4,4'-disubstituted di-Ph tellurides (I; R = H, Me, OH, OMe, NH<sub>2</sub>, NMe<sub>2</sub>, NHPH, CF<sub>3</sub>), the catalytic activity increased when mesomerically electron-donating substituents were present. Attempts to correlate the catalytic efficiency, expressed as log t<sub>50</sub>-1, with Hammett σ<sub>p</sub>-values were successful in the 1-octyl mercaptan (r = 0.97; n = 8) and tert-Bu mercaptan (r = 0.92; n = 8) systems. In order to study the effect of coordinating, basic, acidic, or neutral substituents on catalyst efficiency, a series of 2,2'-disubstituted di-Ph tellurides (II; R = CH<sub>2</sub>OH, CH<sub>2</sub>NMe<sub>2</sub>, COOH, COOMe, OH, OMe, NH<sub>2</sub>) di-Ph tellurides 6 were prepared and evaluated in the three thiol systems. II were generally less active than I. The poor catalytic activity of bis(2,6-dimethylphenyl) telluride indicates the importance of steric factors. A two-step mechanism,

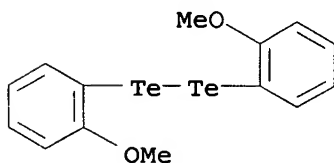
involving H<sub>2</sub>O<sub>2</sub>-oxidation of the diorganyl telluride to a tellurium(IV) dihydroxide and reduction by thiol with disulfide formation, was proposed to account for the observed catalysis. The similar t<sub>50</sub> values obtained in the tert-Bu mercaptan and 1-octyl mercaptan systems seem to indicate that oxidation is rate-determining in the catalytic process. This view was also corroborated by the structure/activity results obtained with I, <sup>1</sup>H NMR expts., and results obtained using a poorer oxidant (tert-Bu hydroperoxide) in the standard 1-octyl mercaptan assay.

- CC 22-7 (Physical Organic Chemistry)  
Section cross-reference(s): 7, 29
- ST thiol peroxidase model organyl telluride
- IT Tellurides  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diorganyl, catalysts for oxidative coupling of thiols, kinetics and mechanism with)
- IT Reaction constant  
(for diorganyl telluride catalyzed oxidative coupling of thiols)
- IT Oxidation  
Reduction  
(of diorganyl tellurium by hydrogen peroxide as rate determining step in oxidative coupling of thiols)
- IT Kinetics of oxidation  
Kinetics of reduction  
(of diorganyl tellurium by hydrogen peroxide in oxidative coupling of thiols)
- IT Steric effect  
(on diorganyl telluride catalyzed oxidative coupling of thiols)
- IT Thiols, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidative coupling of, kinetics and mechanism of diorganyl telluride catalyzed)
- IT Coupling reaction catalysts  
Dimerization catalysts  
(oxidative, diorganyl tellurides, for thiols, kinetics and mechanism with)
- IT Kinetics of coupling reaction  
Kinetics of dimerization  
(oxidative, of thiols mediated by diorganyl tellurides)
- IT Coupling reaction  
Dimerization  
(oxidative, of thiols mediated by diorganyl tellurides, mechanism of)
- IT 834-15-1, Bis(4-methylphenyl) telluride 1202-36-4, Diphenyl telluride 4456-34-2, Bis(4-methoxyphenyl) telluride 38788-38-4, Dibutyl telluride 57857-70-2, Bis(4-methoxyphenyl) telluroxide 59130-74-4, Bis(4-dimethylaminophenyl) telluride 77422-94-7, Di-2-thienyl telluride 86436-76-2 86436-77-3 92970-42-8 105404-95-3 144381-98-6, Bis(4-trifluoromethylphenyl) telluride 144381-99-7, Bis(4-hydroxyphenyl) telluride 144382-00-3, Bis(4-phenylaminophenyl) telluride 144382-01-4, Bis(4-aminophenyl) telluride  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst, for oxidative coupling of thiols by hydrogen peroxide, kinetics and mechanism with)
- IT 95-56-7, 2-Bromophenol 106-41-2, 4-Bromophenol 128-39-2, 2,6-Di-tert-butylphenol 342-54-1 576-26-1, 2,6-Dimethylphenol 621-23-8 10026-07-0, Tellurium tetrachloride 18982-54-2, 2-Bromobenzyl alcohol 40899-71-6, N-(Benzenesulfonyl)indole 56821-76-2, Bis(2-methoxyphenyl) ditelluride 72695-32-0, Bis(2-aminophenyl) ditelluride 77422-85-6 155791-98-3  
RL: PROC (Process)  
(conversion of, to diaryl telluride)

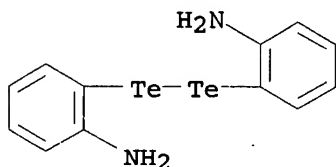
- IT 9013-66-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diorganyl tellurides as models for)
- IT 154234-07-8D, 4,4'-disubstituted  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(intermediacy of, in diaryl telluride catalyzed oxidative coupling of thiols)
- IT 75-91-2, tert-Butyl hydroperoxide 7722-84-1, Hydrogen peroxide, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidative coupling by, of thiols, kinetics and mechanism of diorganyl telluride catalyzed)
- IT 75-66-1, tert-Butyl mercaptan 111-88-6, 1-Octyl mercaptan 616-91-1, N-Acetylcysteine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidative coupling of, by hydrogen peroxide, kinetics and mechanism of diorganyl telluride catalyzed)
- IT 135084-97-8P, 3,5-Dimethyl-4-hydroxyphenyl tellurium trichloride 155791-99-4P, Bis(2,4,6-trimethoxyphenyl) ditelluride  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and conversion of, to diaryl telluride)
- IT 77446-41-4, Bis(2-hydroxymethylphenyl) telluride 105152-02-1, Bis(2-methoxyphenyl) telluride 144382-05-8, 4-Hydroxyphenyl phenyl telluride 149902-64-7, Bis(2-dimethylaminomethylphenyl) telluride 152943-38-9, Bis(2-hydroxyphenyl) telluride 152943-39-0 152943-42-5 155791-94-9, Bis(2-methoxycarbonylphenyl) telluride 155791-95-0 155791-96-1, Bis(2,4,6-trimethoxyphenyl) telluride 155791-97-2, Bis(2-indolyl) telluride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation as catalyst, for oxidative coupling of thiols by hydrogen peroxide, kinetics and mechanism with)
- IT 10028-16-7P, Ditellurium, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)
- IT 38788-38-4, Dibutyl telluride  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst, for oxidative coupling of thiols by hydrogen peroxide, kinetics and mechanism with)
- RN 38788-38-4 HCAPLUS  
CN Butane, 1,1'-tellurobis- (9CI) (CA INDEX NAME)

n-Bu-Te-Bu-n

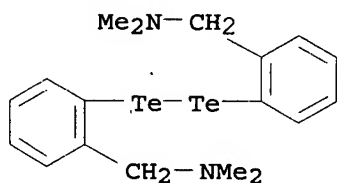
- IT 56821-76-2, Bis(2-methoxyphenyl) ditelluride 72695-32-0, Bis(2-aminophenyl) ditelluride 155791-98-3  
RL: PROC (Process)  
(conversion of, to diaryl telluride)
- RN 56821-76-2 HCAPLUS  
CN Ditelluride, bis(2-methoxyphenyl) (9CI) (CA INDEX NAME)



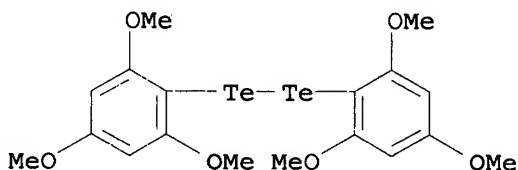
RN 72695-32-0 HCAPLUS  
 CN Benzenamine, 2,2'-ditellurobis- (9CI) (CA INDEX NAME)



RN 155791-98-3 HCAPLUS  
 CN Benzenemethanamine, 2,2'-ditellurobis[N,N-dimethyl- (9CI) (CA INDEX NAME)



IT 155791-99-4P, Bis(2,4,6-trimethoxyphenyl) ditelluride  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and conversion of, to diaryl telluride)  
 RN 155791-99-4 HCAPLUS  
 CN Ditelluride, bis(2,4,6-trimethoxyphenyl) (9CI) (CA INDEX NAME)

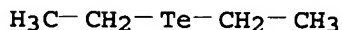


L51 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1979:104592 HCAPLUS  
 DN 90:104592  
 TI Tellurium catalyzed decomposition of peroxide intermediates resulting from  
 the autoxidation of unsaturated aldehydes  
 IN Leonard, John J.; Kao, Jar-lin  
 PA Atlantic Richfield Co., USA  
 SO U.S., 6 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

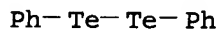
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4124633	A	19781107	US 1977-820996	19770801
PRAI	US 1977-820996	A	19770801		
AB	The peroxy compds. produced along with $\alpha,\beta$ -unsatd. carboxylic acids when unsatd. aliphatic aldehydes were oxidized in the liquid phase were				

decomposed in the presence of Te catalysts to give the desired unsatd. acids. Thus, methacrolein [78-85-3] and pentane solvent were heated to 45° under 200 psig air pressure, and, after 5 psig pressure drop, O was added to the reactor. When the reaction was complete, the mixture was cooled, washed with pentane, and mixed with 0.5 g BHT. An 80.4 g portion of the product, containing methacrolein 15.8, permethacrylic acid [15325-71-0] 0.83, methacrolein monopermethacrylate [69267-87-4] 2.30, methacrylic acid [79-41-4] 3.30, and pentane 77.6% with small amts. of other byproducts was distilled to give 65 g distillate which was heated 4 h at 50° in the presence of 1% TeBr<sub>4</sub>, giving overall conversion 27% and selectivity for methacrylic acid 55%, compared with 20% and 32%, resp., for a control reaction in which the oxidate was heated in the absence of a catalyst.

IC C07C051-32  
 INCL 562598000  
 CC 35-2 (Synthetic High Polymers)  
 Section cross-reference(s): 23  
 ST tellurium catalyst peroxide decompn; permethacrylic acid decompn catalyst; methacrylic acid manuf; methacrolein oxidn intermediate decompn  
 IT Degradation catalysts  
 (tellurium compds., for peroxide intermediates in acrolein oxidation)  
 IT 627-54-3 1304-82-1 1314-91-6 7446-07-3 10026-07-0  
 10031-27-3 10049-23-7 13494-80-9, uses and miscellaneous 27334-16-3  
 32294-60-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for decomposition of peroxide intermediates in acrolein oxidation)  
 IT 16767-77-4 69267-88-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (decomposition of, from acrolein oxidation, catalysts for)  
 IT 15325-71-0 69267-87-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (decomposition of, from methacrolein oxidation, catalysts for)  
 IT 79-10-7P, preparation 79-41-4P, preparation  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manufacture of)  
 IT 78-85-3 107-02-8, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxidation of, decomposition of peroxide intermediates in, catalysts for)  
 IT 627-54-3 32294-60-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for decomposition of peroxide intermediates in acrolein oxidation)  
 RN 627-54-3 HCAPLUS  
 CN Ethane, 1,1'-tellurobis- (9CI) (CA INDEX NAME)



RN 32294-60-3 HCAPLUS  
 CN Ditelluride, diphenyl (9CI) (CA INDEX NAME)



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